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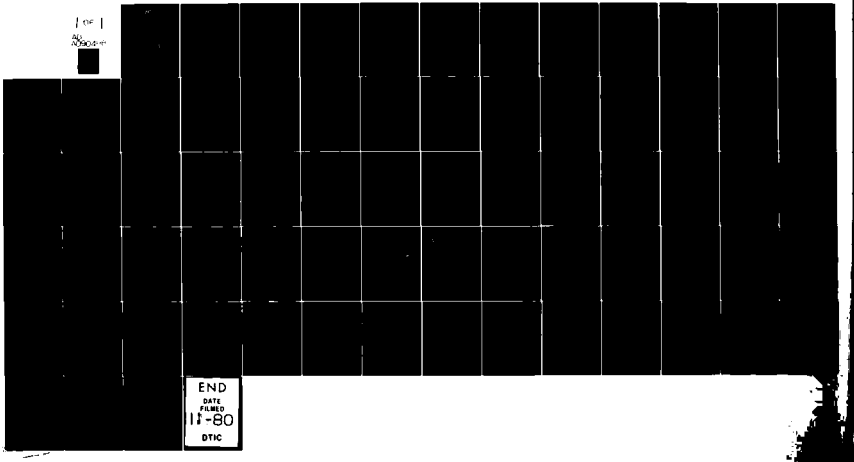

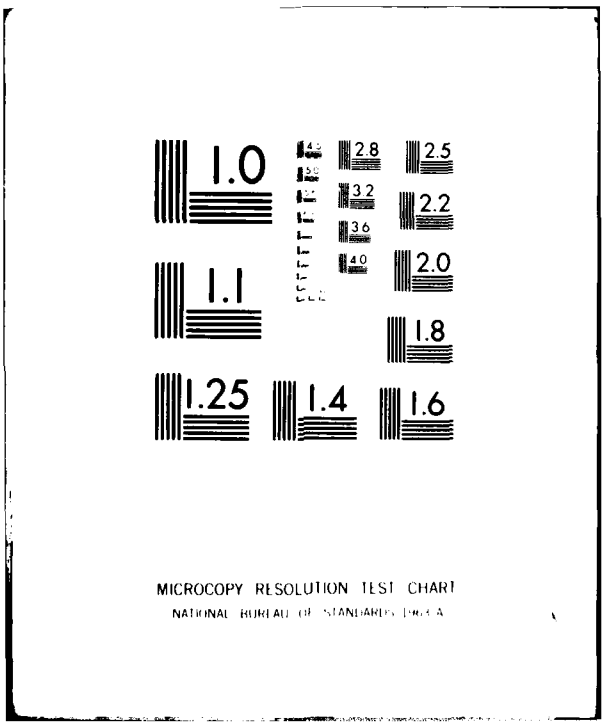
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(6) DECENTRALIZED INPATIENT PHARMACY SERVICE STUDY.
PART B.

The Relative Merits of Decentralized/Clinical Pharmacy Services.

by

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

The purpose of this research was to identify the functional requirements and acceptability of decentralized/clinical pharmacy services by health care professionals. In June 1979, a random sample of nurses ~~(n = 1000)~~, physicians ~~(n = 700)~~, and pharmacists ~~(n = 145)~~ assigned to 35 Army Medical Treatment Facilities in the United States were requested to complete surveys designed to assess their perceptions of various pharmacy support activities. The results showed that pharmacists rate as most important job tasks which require providing pharmaceutical information to health care professionals. Close pharmacist/staff

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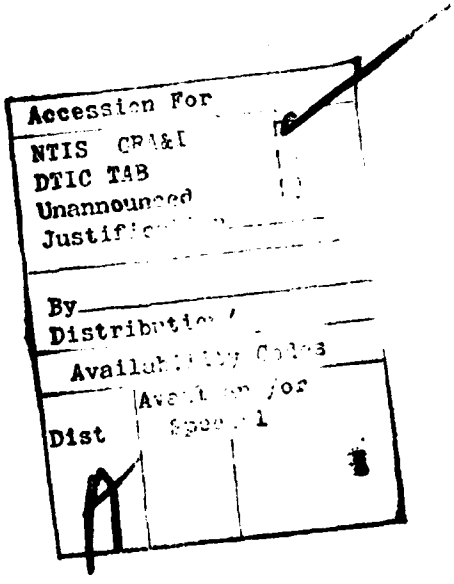
communication is necessary to promote positive attitudes toward specific pharmaceutical tasks. Health care workers are most dissatisfied with pharmacy services in which the pharmacist provides information to the professional staff and drug discharge consultation. The five clinical areas perceived to have the greatest demand for decentralized/clinical pharmacy support are Medical ICU, Surgical ICU, Oncology, Cardiology, and Pediatrics.



SUMMARY

Under existing Army pharmacy programs, the preparation of parenteral solutions has been centralized and unit dose drug distribution systems established at numerous Army inpatient facilities. However, there are accompanying problems with centralized unit dose such as missing medications (Pang and Grant, 1975), timely response and failure to communicate new or changed medication orders, patient discharges and patient transfers (Jackson, Anderson and McGuire, 1978). Furthermore, even though centralized unit dose systems have resulted in some increased utilization of pharmacists' professional training, experience and knowledge, the Army pharmacist all to often remains an under-challenged and under-utilized member of the patient care team.

Previous studies in civilian hospitals have found that selective decentralization of unit dose medications from inpatient satellite pharmacies, when compared to centralized systems, has helped to overcome problems in responsiveness and communication, enhance rational drug therapy and reduce medication and personnel costs (Pang and Grant, 1975; John, Burkhart and Lamy, 1976; Yorio, 1972). Furthermore, the physical proximity of decentralized pharmacies to patient care areas may enhance rapport between pharmacists and other health care professionals, and facilitate the development of patient or therapy-related activities. Hence, decentralized unit dose services from satellite pharmacies in support of a specific clinical area should be conducive to the development of clinical pharmacy. However, justification for establishing such services in Army MTFs are yet to be demonstrated. There is a current need to identify the functional requirements and acceptability of decentralized/clinical pharmacy services by health care professionals.

In June 1979, a random sample of nurses (n = 1000), physicians (n = 700) and pharmacists (n = 145), assigned to 35 Army MTFs in the United States were requested to complete surveys regarding their perceptions of various pharmacy support activities.

From the results of the present study it can be concluded that:

A. Pharmacists rate as most important those tasks which require providing information to health care professionals. Major importance is attached to tasks such as answering questions by physicians and nurses, providing information on drug dosage and providing information about a drug that is new or unfamiliar.

B. Close pharmacist/staff communication is necessary to promote positive values toward specific pharmaceutical tasks.

C. Nurses, physicians and pharmacists are most satisfied with pharmacy services in which the pharmacist provides information to the professional staff and most dissatisfied with patient education in medication compliance and drug discharge consultation. The dissatisfaction is more than likely the result of pharmacists not having adequate time to provide patient education and discharge consultation services.

D. Unit dose support has little impact on the perceptions of nurses, physicians and pharmacists on the importance of task characteristics of clinical pharmacy services.

E. Decentralized pharmacy support has little effect on the perceptions of nurses, physicians and pharmacists in determining which patient care activities the pharmacist should perform. On the other hand, health care professionals supported by decentralized services express significantly greater agreement that decentralized/clinical pharmacy services should be implemented or expanded in Army MTFs.

F. The five clinical areas perceived to have the greatest demand for decentralized/clinical pharmacy support are Medical ICU, Surgical ICU, Oncology, Cardiology and Pediatrics.

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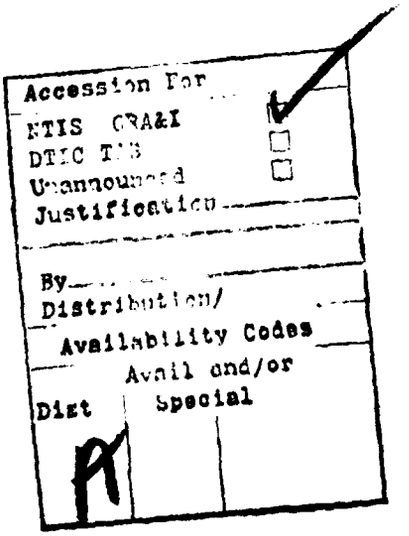

LIST OF TABLES

I. INTRODUCTION.

A. Purpose. The present study is the second part of Phase I: Decentralized Inpatient Pharmacy Service Study. The primary objectives of this part of the study were:

(1) To determine the level of nurse, physician and pharmacist satisfaction with pharmacy services now provided in Army MTFs.

(2) To determine the perceptions of nurses, physicians and pharmacists regarding decentralized/clinical pharmacy services in Army MTFs.

(3) To identify pharmacist activities which should be included in a decentralized/clinical pharmacy service.

(4) To identify the clinical areas with the greatest demand for decentralized/clinical pharmacy support as perceived by nurses, physicians and pharmacists.

B. Background - Literature Review.

(1) Under existing Army Pharmacy programs, the preparation of parenteral solutions has been centralized and unit dose drug distribution systems established at numerous Army inpatient facilities. Over 75% of these inpatient facilities dispense medications on a unit dose basis (Hartley and Rauch, 1980). Nevertheless, centralization of unit dose has not proven to be a panacea. There are accompanying problems such as missing medications (Pang and Grant, 1975), timely response and failure to communicate new or changed medication orders, patient discharges and patient transfers (Jackson, Anderson and McGuire, 1978). Furthermore, even though centralized unit dose systems have resulted in some increased utilization of pharmacists' professional training, experience and knowledge, the Army pharmacist all too often remains an under-challenged and under-utilized member of the patient care team.

(2) Previous studies in civilian hospitals have found that selective decentralization of unit dose medications from inpatient satellite pharmacies, when compared to centralized systems, has helped to: (a) overcome problems in responsiveness and communication (Pang and Grant, 1975); (b) enhance rational drug therapy (John, Burkhart and Lamy, 1976); and (c) reduce medication and personnel costs (John, et. al., 1976; Yorio, 1972).

(3) Pharmacy personnel activities and labor costs in decentralized and centralized unit dose drug distribution systems were compared in a study by John, Burkhart and Lamy (1976). The results strongly indicated an overall difference in the activities between decentralized and centralized unit dose services. More time was spent in therapy-related activities by pharmacists practicing in decentralized areas. In addition, nonpharmacist personnel in the decentralized unit dose systems spent significantly more time preforming dispensing functions than did their counterparts in centralized unit dose areas. The findings suggest that the physical proximity of decentralized pharmacies to patient care areas may enhance rapport between pharmacists and other health care professionals, and facilitate the development of patient or therapy-related activities. Moreover, since there was a significantly greater proportion of therapy-related activities in decentralized areas, decentralization of unit dose may be more conducive to the development of clinical-patient care pharmacies.

(4) Previous studies have described the activities of patient care pharmacists practicing in varied settings, such as rural facilities (Curtiss and Wertheimer, 1978), pediatric medical rounds (Klotz and Steffens, 1976), mental health services (Stimmel, 1977; Dugas, Cardoni and Pierpaoli, 1975), hypertensive clinics (McKenney, Slining and Hendersen, 1973), emergency medicine (Elenbaas, Waeckerle and McNabney, 1977), and primary health care (Johnson and Tuchler, 1975). Although it is evident that pharmacists are active components in the previous patient care programs, the ultimate success of clinical pharmacy will be dependent upon the attitudes of nurses, physicians and patients toward the clinical pharmacist and the services offered (deLeon, 1971; McKay and Jackson, 1976). Previous studies have reported that close physician-pharmacist communication and cooperation were necessary to promote the development of positive attitudes toward specific pharmaceutical services (Knapp, Knapp and Edwards, 1969; Kapnick, Blissitt and Rabe, 1970; Smith, Sorby and Sharp, 1975; Wallace and Kradjan, 1977; Bernstein, Klett and Jacoby, 1978). Furthermore, patients exposed to increased pharmacist communication about drug therapy experienced a substantial improvement in attitude toward pharmacy services (Yellin and Norwood, 1974; Norwood, 1975). Helling, Hepler and Jones (1979) reported that a group of patients who had at least one clinical pharmacy encounter in a family practice clinic demonstrated significantly more satisfaction with the overall quality of health care they received from the clinic than did a control group which had not received any clinical pharmacy services. The study not only showed more patient satisfaction in overall health care, but also greater satisfaction in pharmacy-related areas. However, the concept of pharmacists providing drug information and other patient care activities has not been entirely accepted. Previous studies have been conducted to evaluate physicians' perceptions of drug information resources (Smith, Sorby and Sharp, 1975; Harelik, Johnston, Rivers and Ryan, 1975). The results showed that physicians consistently rated professional journals and the Physicians' Desk Reference as "good" sources of drug information, but rated the pharmacist as a "poor" source. Moreover, pharmacists were seldom considered as sources of drug information which would directly affect patient therapy. In a study with contrasting results, Hamm et. al. (1973) reported that 82% of the sampled physicians favored using the pharmacist as a continual source of drug information.

(5) Pharmacists practicing in patient care areas and selected decentralization of unit drug services are of particular interest because of the potential benefit to patient care and professional growth of pharmacists. However, justification for establishing such services in Army MTFs are yet to be demonstrated.

II. METHOD.

A. Subjects. Survey respondents consisted of a random sample of nurses (N = 739), physicians (N = 313) and pharmacists (N = 153) assigned to 35 Army Medical Treatment facilities in the United States.

B. Procedure. Information was obtained by means of survey questionnaires separately developed for nurses, physicians and pharmacists (see Appendix A). Questionnaires were pre-tested for clarity and content validity in a pilot test. Demographic information was requested and all other responses were arranged in a 7-point Likert-type format. Each survey was addressed to the subject personally and mailed in June of 1979. After completion, respondents were instructed to return the surveys using a government franked return address sheet.

III. RESULTS.

A. Demographic Characteristics of Professional Groups: Nurses, Physicians and Pharmacists. Preliminary analyses were conducted to control for age, years of military service and length of time assigned to MTF. Table I presents inter-cell means and standard deviations for these variables, and Table II shows the results of a one-way ANOVA. Inspection of the analyses in Table II reveals no significant difference between groups as a function of age, whereas significant differences were found for years of military service $F(2, 1183) = 4.86$, $p < .008$, and length of time assigned to MTF $F(2, 1187) = 12.49$, $p < .001$. Between groups, nurses had the greatest number of years in military service, $\bar{x} = 9.06$, and the greatest length of time assigned to MTF, $\bar{x} = 43.40$ months. Pharmacists had the least number of years of military service, $\bar{x} = 7.36$, while physicians the shortest length of time assigned to MTF, $\bar{x} = 26.81$ months.

B. Perceived Importance of Clinical Pharmacy Tasks by Professional Groups: Nurses, Physicians and Pharmacists. Table III presents the results of a one-way ANOVA using years of military service and length of time assigned to MTF as covariates and perceived importance of the selected task as the dependent measure. On each selected task, the pharmacists' rating of perceived importance was higher (i.e., judged more important) than either nurses' or physicians'. Furthermore, on every task with the exception of one, physicians' ratings were lower than pharmacists' and nurses'. Significant group differences regarding the relative importance of pharmacy tasks were achieved for every task except for: (a) participation in the establishment of a drug formulary, (b) compounding IV additives and (c) answering questions asked by physicians and nurses. The five most important tasks as perceived by each group were identical although only one, answering questions asked by physicians and nurses, was mutually ranked as the most important. Table III also depicts the results of a Scheffe procedure on pairs of group means on each clinical pharmacy task. Significant differences (F values) for all possible pairs of group means were found for all clinical pharmacy tasks with the exception of providing information about a drug that is new or unfamiliar. On this task, nurses and pharmacists did not differ from one another but both differed from physicians.

C. Perceived Importance of Clinical Pharmacy Tasks Between Respondents Whose Pharmacy Service Provides the Indicated Task (Group 1) and Respondents Whose Pharmacy Service Does Not Provide the Task (Group 2). A comparison of Groups 1 and 2 indicated no significant difference as a function of age, years of military service, or length of time assigned to MTF. Means, standard deviations and the results of univariate F tests are depicted in Table IV. Significant group differences were found for every task with Group 1 (respondents whose pharmacy service provides the indicated task) rating the task as more important than their counterparts. The largest discrepancies between groups occurred with participation on the emergency team, $F(1, 971) = 172.17$, $p < .001$, maintaining drug therapy information on patients $F(1, 978) = 127.81$, $p < .001$, compounding IV additives $F(1, 1051) = 106.80$, $p < .001$, and conduct follow-up observation of patients to determine efficacy of drug therapy $F(1, 1033) = 100.98$, $p < .001$.

D. Nurse, Physician and Pharmacist Satisfaction with Current Pharmacy Services. Each of the 22 dependent measures concerning satisfaction with current pharmacy services was analyzed with a one-way analysis of covariance (ANCOVA). When the analysis revealed significant differences between the mean

scores of professional groups, pairs of groups were compared using a Scheffe procedure. Table V shows the means, standard deviations and F tests for each satisfaction item. Significant professional group differences were found on every item with the exception of accuracy of patient medication profiles, information on the pharmacy patient profile, hours of operation of the pharmacy service and the unit dose drug distribution system.

E. The Effect of Professional Group (Nurse, Physician and Pharmacist) on the Perceptions of Task Characteristics of Clinical Pharmacy Services. The results from a one-way ANCOVA are presented in Table VI. Significant differences between professional groups were found for every task when years of military service and length of time assigned to MTF were controlled for. Inspection of intercell means and standard deviations reveal that pharmacists recorded higher scores than nurses and physicians on all but two task characteristics, while physicians (without exception) obtained the lowest scores on every task.

To determine which mean scores significantly differed on each task characteristic, an a posteriori contrast test was applied to the data. The results of a Scheffe procedure on each task characteristic is depicted in Table VI. Statistically significant differences on all possible pairs of group means were found for every task characteristic of clinical pharmacy services with the exception of pharmacist should serve on the hospital emergency team (physicians < nurses, pharmacists), pharmacist should serve the drug information needs of the medical and nursing staffs (physicians < nurses, pharmacists) and pharmacist should check the physician's drug order prior to administration of drug to patient (pharmacist > nurses, physicians). Overall, respondents perceived the most important/agreeable task characteristic concerned the pharmacist serving the drug information needs of the medical and nursing staffs.

F. The Effect of Professional Group and Unit Dose Support on the Perceptions of Task Charcteristics of Clinical Pharmacy Services. Table VII presents the results of a two-way ANCOVA using years of military service and length of time assigned to MTF as covariates. Dependent variables include task characteristics associated with clinical pharmaceutical services and independent variables were professional group (nurses, physicians and pharmacists) and unit dose support (i.e., whether or not the respondents' ward/service was supported by unit dose). Inspection of the data shows significant differences on all task characteristics as a function of professional group. In contrast, significant differences for professional groups supported by unit dose versus those not supported by unit dose were obtained for only two tasks: pharmacist should monitor each patient's drug therapy regimen by maintaining a patient medication profile $F(1, 1055) = 28.35$, $p < .001$, and pharmacist should check the physician's drug order prior to administration of drug to patient $F(1, 1055) = 8.95$, $p < .001$. On these two tasks, respondents supported by unit dose had a more favorable response to that task than those not supported by unit dose services. There was a significant interaction for one task: pharmacist should serve the drug information needs of the medical and nursing staffs $F(2, 1055) = 3.74$, $p < .024$. Close examination of the cell means in Table VII for this task reveals that there was little difference between nurses and pharmacists supported by unit dose versus those not supported by unit dose. On the other hand, cell means for physicians were much larger in the unit dose support condition as compared to the no unit dose support, (6.42 and 6.13, respectively).

G. The Effect of Professional Group and Decentralized Pharmacy Support on the Perceptions of Clinical Pharmacy Services. The analysis consisted of an ANCOVA with years of military service and length of time assigned to MTF as covariates and perception of task characteristics of clinical pharmacy services as the dependent variable. Independent variables were professional group and type of pharmacy support (i.e., whether the respondents were supported by a decentralized or centralized pharmacy). Table VIII presents intercell means and the results of a two-way ANCOVA. Examination of the cell means reveal significant professional group differences on every task characteristic, yet significant differences between the type of pharmacy support, (decentralized versus centralized) were obtained for only two dependent measures: the Army should institute decentralized or satellite pharmacy service in its hospitals $F(1, 1055) = 44.17$, $p < .001$ and the Army should implement or expand clinical pharmacy practice in its hospitals $F(1, 1055) = 8.89$, $p < .003$. On both measures, cell means were significantly larger for the respondents supported by decentralized services. There was no significant professional group x type of pharmacy support interaction on any of the dependent measures.

H. Clinical Areas with the Greatest Demand for Decentralized/Clinical Pharmacy Services as Perceived by Professional Groups: Nurses, Physicians and Pharmacists. Significant differences between professional groups were found for each clinical area investigated. Intercell means, standard deviations and the results of a one-way ANCOVA (years of military service and length of time assigned to MTF were covariates) are presented in Table IX. Physicians consistently rated the need for decentralized/clinical pharmacy service lower for each clinical area than did nurses and pharmacists. Overall, the five clinical areas perceived to have the greatest demand for decentralized/clinical pharmacy service were Medical Intensive Care Unit (ICU), Surgical ICU, Oncology, Pediatrics and Cardiology.

I. Clinical Areas with the Greatest Demand for Decentralized/Clinical Pharmacy Service as Perceived by Respondents Having Previous Exposure to Decentralized Service versus Respondents Not Having Exposure to Decentralized Service. Comparison of the exposure and no exposure groups revealed no significant differences as a function of age, years of military service and length of time assigned to MTF. Table X shows intercell means, standard deviations and the results of a one-way ANOVA. Clinical areas with the highest means (i.e., perceived to have the greatest demand for decentralized/clinical pharmacy) were Medical ICU, Surgical ICU, Oncology, Cardiology and Pediatrics. Of the five clinical areas previously stated, significant group differences were obtained for Medical ICU $F(1, 1036) = 5.51$, $p < .019$, Cardiology $F(1, 1018) = 5.72$, $p < .017$, and Pediatrics $F(1, 1025) = 5.33$, $p < .021$.

J. Clinical Areas with the Greatest Demand for Decentralized/Clinical Pharmacy Service as Perceived by MEDCEN and MEDDAC Respondents. Comparison of MEDCEN and MEDDAC respondents showed no significant differences as a function of age, years of military service, or length of time assigned to MTF. Table XI presents intercell means, standard deviations and the results of a one-way ANOVA. Inspection of the means in Table XI reveal that Medical ICU, Surgical ICU, Oncology, Cardiology and Pediatrics are the five clinical areas perceived to have the greatest demand for decentralization and clinical pharmaceutical services.

IV. DISCUSSION.

A. Perceived Importance of Clinical Pharmacy Tasks by Professional Groups: Nurses, Physicians and Pharmacists. Of primary interest was the general finding

that pharmacists rate as most important those tasks which require providing information to members of the hospital staff, in comparison with all other pharmacy tasks. Pharmacists tend to attach major importance to tasks that require providing information such as answering questions by physicians and nurses, providing information on drug dosage and providing information about a drug that is new or unfamiliar. Although there were significant differences between professional groups regarding the relative importance of these tasks, nurses and physicians tended to agree that these tasks were the most important in the pharmacist's role.

Pharmacists believe that their follow-up observation of patients to determine drug efficacy and possible adverse reactions and participating on the emergency team to be important, although less important than other tasks. Physicians and nurses disagree significantly with pharmacists regarding the importance of these activities by rating them as neutral to unimportant. Compounding intravenous (IV) additives and helping to establish a drug formulary is seen as being a moderately important function of pharmacists equally by nurses, physicians and pharmacists.

B. Perceived Importance of Clinical Pharmacy Tasks Between Respondents Whose Pharmacy Services Provides the Indicated Task (Group 1) Versus Respondents Whose Pharmacies Do Not Provide the Task (Group 2). Close pharmacist/staff communication necessary to promote the development of positive values toward specific pharmaceutical tasks is strongly supported by the present findings since significant group differences were found for every task.

The group whose pharmacy service provides the task had significantly greater means when compared to their counterparts. Furthermore, tasks with the greatest means were those where the pharmacist provided information about drugs or answered questions by physicians and nurses. Mean scores for respondents whose pharmacy service did not provide the service were largely noncommital with the exception of one -- providing information about a drug that is new or unfamiliar -- which was perceived to be the most important. Overall, respondents having exposure to pharmacists performing a given task rated that task significantly more important than their less knowledgeable counterparts.

C. Nurse, Physician and Pharmacist Satisfaction with Current Pharmacy Service. These results clearly demonstrate significant professional group differences on 18 of 22 pharmacy satisfaction measures. Nurses are most satisfied with the amount of drug information provided in response to physician and nurse needs, physicians with the pharmacists' availability to provide professional services to other members of the health care team, and pharmacists with the availability of emergency drugs for use by the health care team. On the other hand, nurses and pharmacists are most dissatisfied with drug consultations by the pharmacist to orient the patient to proper methods and effects of taking their medication after discharge and the education of patients and families in medication compliance respectively. Interestingly, the lowest physician means are more indicative of indifference (neutral ratings) rather than dissatisfaction with selected pharmacy services. Overall, respondents were most satisfied with services in which the pharmacist provides information to the professional staff and most dissatisfied with patient education in medication compliance and drug discharge consultation.

D. The Effect of Professional Group and Unit Dose Support on the Perceptions of Task Characteristics of Clinical Pharmacy Services. The perceptions of nurses, physicians and pharmacists significantly differed on every task characteristic.

However, all three professional groups reported most agreement with the task characteristic of the pharmacist serving the drug information needs of the medical and nursing staffs.

Professionals supported by unit dose differed from those not supported by unit dose on only two task characteristics. Furthermore, the only significant interaction was found for pharmacists should serve the drug information needs of the medical and nursing staffs and was the result of a relatively large difference between physicians supported by unit dose versus physicians not supported by unit dose. Overall, it must be concluded that unit dose support has very little impact on the perceptions of nurses, physicians and pharmacists on the importance of task characteristics of clinical pharmacy services.

E. The Effect of Professional Group and Decentralized Pharmacy Support on the Perceptions of Clinical Pharmacy services. Clearly, nurses, physicians and pharmacists perceive the importance of the task characteristics presented in Table VIII quite differently. Professionals supported by a decentralized pharmacy service significantly differed from professionals supported by a centralized pharmacy service on only two task characteristics. As expected, professionals supported by decentalized services expressed significantly greater agreement that decentralized or satellite pharmacy services and clinical pharmacy practice should be expanded or implemented in Army MTFs. This finding is consistent with the notion that the physical proximity of decentralized pharmacies to patient care areas enhances rapport between pharmacists and other health care professionals and facilitates the development of patient care-related activities by the pharmacist. Yet, on selected task characteristics there was no significant difference as a function of the type of pharmacy support. This finding appears to be in conflict with the earlier finding showing that acceptance of pharmacists' practicing patient care activities is a function of decentralized pharmacy support. One possible explanation for this discrepancy is the health care professionals supported by decentralization significantly favor the clinical pharmacy concept, but are not in agreement as to which of the patient care activities the pharmacists should perform.

F. Clinical Areas with the Greatest Demand for Decentralized/Clinical Pharmacy Services. The findings of the present study strongly indicate that Medical ICU and Surgical ICU are the two clinical areas which have the greatest demand for decentralized/clinical pharmacy support. Furthermore, when the sample was broken down by respondents having previous exposure to decentralized service versus not having such exposure, Medical ICU and Surgical ICU were rated as being the most desirable for decentralized/clinical support. Responses were also broken down by MEDCEN versus MEDDAC and revealed similar results: Medical ICU and Surgical ICU obtained the largest means indicating the highest priority of need.

The fact that respondents perceive Medical ICU and Surgical ICU to be the areas in greatest need for decentralized/clinical pharmacy support may result from the need to provide as much effective professional support to these high care areas as possible. Decentralization of Medical and Surgical ICUs may be perceived to give the pharmacist closer proximity to the patient, physicians and ICU nurses thereby increasing the pharmacists' clinical effectiveness and providing more efficient logistical support to the nurse and patient.

V. CONCLUSIONS.

It is concluded that:

(a) Pharmacists rate as most important those tasks which require providing information to health care professionals. Major importance is attached to tasks such as answering questions asked by physicians and nurses, providing information on drug dosage, and providing information about a drug that is new or unfamiliar.

(b) Close pharmacist/staff communication is necessary to promote positive values toward specific pharmaceutical tasks.

(c) Nurses, physicians and pharmacists are most satisfied with pharmacy services in which the pharmacist provides information to the professional staff and most dissatisfied with patient education in medication compliance and drug discharge consultation. The dissatisfaction is more than likely the result of pharmacists not having adequate time to provide patient education and discharge consultation services.

(d) Unit dose support has little impact on the perceptions of nurses, physicians and pharmacists on the importance of task characteristics of clinical pharmacy services.

(e) Decentralized pharmacy support has little effect on the perceptions of nurses, physicians and pharmacists in determining which patient care activities the pharmacist should perform. On the other hand, health care professionals supported by decentralized services express significantly greater agreement that decentralized/clinical pharmacy services should be implemented or expanded in Army MTFs.

(f) The five clinical areas perceived to have the greatest demamd for decentralized/clinical pharmacy support are Medical ICU, Surgical ICU, Oncology, Cardiology, and Pediatrics.

VI. RECOMMENDATIONS.

a. Recommend that an abstract of the present study be made available to all Army pharmacists and health care planners.

b. Recommend a pilot study to test a proposed decentralized unit dose and clinical pharmacy program at Brooke Army Medical Center.

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TABLES

Table I

Demographic Characteristics of Professional Groups:
Nurses, Physicians and Pharmacists

Demographic Variable	Nurse (n = 739)		Physician (n = 313)		Pharmacist (n = 153)	
Age (yrs)	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
	34.89	10.56	35.64	7.64	34.91	8.55
Military Service (yrs)	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
	9.06	6.62	8.29	6.69	7.36	5.70
Length of Time Assigned to MTF (months)	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
	43.40	58.61	26.81	21.24	35.93	39.34

Table II

Analysis of Variance for Demographic Characteristics of Professional Groups

Demographic Variable	Nurse Mean	Nurse SD	Physician Mean	Physician SD	Pharmacist Mean	Pharmacist SD	F	SIG
Age (yrs)	34.89	10.56	35.64	7.64	34.91	8.55	-	ns
*Military Service (yrs)	9.06	6.62	8.29	6.69	7.36	5.70	4.86	.008
**Length of Time Assigned to MTF (months)	43.40	58.61	26.81	21.24	35.93	39.34	12.49	.001

* df = (2, 1183)
** df = (2, 1187)

Table III

Perceived Importance of Clinical Pharmacy Tasks
By Nurses, Physicians, and Pharmacists

Score =	Very Unimportant 1	2	3	Neutral 4	5	6	Very Important 7

Clinical Pharmacy Tasks:	Nurse (n = 607) Mean	SD	Physician (n = 269) Mean	SD	Pharmacist (n = 120) Mean	SD	Main Effects F	SIG	Covariates[1] F	SIG
Conduct follow-up observation of patients to determine efficacy of drug therapy	4.46	1.82	3.52	1.77	5.37	1.54	47.87*	.001	2.63	ns
Conduct follow-up observation to determine possible adverse reactions to drug therapy	4.88	1.88	4.45	1.84	5.56	1.59	16.70*	.001		
Providing information on drug dosage	5.83	1.90	5.34	1.69	6.36	1.40	13.06*	.001	3.52	.030
Participation on emergency team	4.54	1.97	3.79	1.90	5.28	1.51	27.93*	.001	5.09	.006
Participation in the establishment of a drug formulary	5.79	1.86	5.94	1.64	5.88	1.42	1.03	ns	2.00	ns
Providing information about a drug that is new or unfamiliar	6.08	1.83	5.72	1.56	6.27	1.35	4.89**	.008	3.08	.046
Compounding IV additives	5.84	1.97	5.80	1.73	6.24	1.59	2.52	ns	2.87	ns

Table III (continued)

Clinical Pharmacy Tasks:	Nurse (n = 607) Mean	SD	Physician (n = 269) Mean	SD	Pharmacist (n = 120) Mean	SD	Main Effects F	SIG	Covariates[1] F	SIG
Answering questions asked by physicians and nurses	6.16	1.83	6.05	1.51	6.48	1.41	2.19	ns	4.42	.012
Maintaining drug therapy information on patients	5.32	1.79	4.90	1.64	5.88	1.45	12.62*	.001	2.87	ns
Participation in introduction of RN's to pharmacy services at your hospital	5.31	1.79	4.93	1.66	5.74	1.47	9.26*	.001	0.85	ns

[1]Covariates were years of military service and length of time assigned to MTF.

*Scheffe procedure indicates all possible pairs of group means differ significantly, $p < .05$.

**Scheffe procedure indicates physicians differ significantly from other groups, $p < .05$.

Table IV

Perceived Importance of Clinical Pharmacy Tasks
Between Respondents Whose Pharmacy Service
Provides the Indicated Task (Group 1) and Respondents
Whose Pharmacy Service Does Not Provide the Task (Group 2)

Score =	Very Unimportant 1	2	3	Neutral 4	5	6	Very Important 7

Task:	Group 1 Mean	Group 1 SD	Group 2 Mean	Group 2 SD	F	SIG	Group 1	Group 2
Conduct follow-up observation of patients to determine efficacy of drug therapy	5.58	1.51	4.07	1.80	100.98	.001	n = 163	n = 871
Conduct follow-up observation to determine possible adverse reactions to drug therapy	5.65	1.74	4.60	1.82	66.19	.001	n = 259	n = 762
Providing information on drug dosage	5.93	1.69	4.92	2.17	41.16	.001	n = 933	n = 145
Participation on emergency team:	5.80	1.68	4.01	1.85	172.17	.001	n = 230	n = 742
Participation in the establishment of a drug formulary for your hospital	5.96	1.72	4.77	1.79	30.60	.001	n = 982	n = 69
Providing information about a drug that is new or unfamiliar	6.08	1.67	5.46	1.89	16.52	.001	n = 947	n = 147

Table IV (continued)

FUNCTION PROVIDED

Task:	Group 1 Mean	SD	Group 2 Mean	SD	F	SIG	Group 1	Group 2
Compounding IV additives	6.05	1.73	4.08	2.24	106.80	.001	n = 955	n = 97
Answering questions asked by physicians and nurses	6.18	1.67	4.20	2.50	27.14	.001	n = 1080	n = 20
Maintaining drug therapy information on patients	5.82	1.57	4.61	1.74	127.81	.001	n = 587	n = 392
Participation in introduction of RN's to pharmacy services at your hospital	5.54	1.65	4.87	1.82	34.43	.001	n = 639	n = 338

Table V

Nurse, Physician and Pharmacist Satisfaction with Current Pharmacy Services

Score =	Extremely Dissatisfied 1	2	3	Neutral 4	5	6	Extremely Satisfied 7

Current Pharmacy Services:	Nurse Mean	Nurse SD	Physician Mean	Physician SD	Pharmacist Mean	Pharmacist SD	Main Effects F	Main Effects SIG	Covariates[1] F	Covariates[1] SIG
The role provided by the pharmacy service in your MEDCEN/MEDDAC toward patient care	5.33	1.21	5.42	1.32	4.64	1.49	16.21***	.001	26.15	.001
The amount of drug information provided in response to physician and nurse needs	5.92	1.11	5.72	1.16	4.89	1.49	47.59*	.001	15.73	.001
Pharmacists' availability to provide professional services to other members of the health care team	5.54	1.44	5.83	1.22	4.60	1.76	11.39***	.001	12.77	.001
The hours of operation of the pharmacy service	5.23	1.73	5.48	1.51	5.31	1.67	2.91	ns	9.57	.001
The accessibility of the pharmacy service (i.e., is the location of the pharmacy convenient to you?)	4.68	1.94	5.70	1.42	4.89	1.82	35.00**	.001	12.77	.001
The transportation of medication to the floor	4.93	1.66	4.91	1.56	4.30	1.89	7.24***	.001	15.42	.001

Table V (continued)

Current Pharmacy Services:	Nurse Mean	Nurse SD	Physician Mean	Physician SD	Pharmacist Mean	Pharmacist SD	ANALYSIS OF COVARIANCE Main Effects F	Main Effects SIG	Covariates[1] F	Covariates[1] SIG
The availability of emergency drugs for use by the health care team	5.45	1.57	5.06	1.70	5.77	1.05	12.01*	.001	14.48	.001
The contents of emergency medication carts and kits	5.57	1.42	5.39	1.46	5.73	1.17	3.13****	.044	6.73	.001
The unit dose drug distribution sustem	4.88	1.62	4.62	1.67	4.89	1.77	1.98	ns	8.94	.001
The way the pharmacy receives medication orders (i.e., the way the physicians' orders are forwarded to the pharmacy)	4.81	1.57	4.98	1.40	4.32	1.75	9.11***	.001		
The pharmacist's monitoring of each patient's drug orders and alerting other health care providers (nurses, physicians, etc.) to potential allergies, interactions, overdoses, etc.	4.19	1.78	4.57	1.48	4.32	1.85	5.67****	.004	12.85	.001
Drug discharge consultations by the pharmacist to orient the patient to proper methods and effects of taking their medication after discharge	4.42	1.54	4.79	1.55	2.99	1.79	61.23*	.001	8.53	.001
The education of patients and families in medication compliance	3.21	1.61	4.22	1.35	3.00	1.79	45.23**	.001	10.47	.001

Table V (continued)

Current Pharmacy Services:	Nurse Mean	Nurse SD	Physician Mean	Physician SD	Pharmacist Mean	Pharmacist SD	Main Effects F	Main Effects SIG	Covariates[1] F	Covariates[1] SIG
Drug therapy monitoring of selected patients (i.e., regular drug profile review, regular chart review, patient contact, etc.) by the pharmacist	3.41	1.45	4.20	1.35	3.20	1.68	32.28**	.001	11.68	.001
Effective communication among nurses, pharmacists, and physicians	4.90	1.55	4.86	1.42	4.42	1.72	6.09***	.002	30.85	.001
The amount of medication waste	4.18	1.63	4.07	1.55	3.49	1.91	9.44***	.001	6.49	.002
The amount of time it takes an order to arrive at the pharmacy	4.72	1.54	4.55	1.47	4.18	1.64	5.68*****	.004	11.69	.001
The amount of time it takes to process an order (i.e., fill a prescription) within the pharmacy	4.65	1.55	4.61	1.66	5.55	1.21	25.00***	.001	11.46	.001
The amount of time it takes to administer a drug order to the patient after being processed (i.e., filled) by the pharmacy	5.06	1.34	4.51	1.55	4.70	1.30	13.71****	.001	15.14	.001
Accuracy of patient medication profiles	4.59	1.38	4.60	1.32	4.77	1.62	1.49	ns	9.48	.001
Information on the pharmacy patient profile	4.29	1.30	4.39	1.21	4.47	1.66	1.84	ns	6.13	.002

Table V (continued)

[1]Covariates were years of military service and length of time assigned to MTF.

*Scheffe procedure indicates all possible pairs of group means differ significantly, $p < .05$.

**Scheffe procedure indicates physicians differ significantly from other groups, $p < .05$.

***Scheffe procedure indicates pharmacists differ significantly from other groups, $p < .05$.

****Scheffe procedure indicates nurses differ significantly from physicians, $p < .05$.

*****Scheffe procedure indicates nurses differ significantly from pharmacists, $p < .05$.

Table VI

Perceptions of Nurses, Physicians and Pharmacists
on Task Characteristics of Clinical Pharmacy Services

Score =	Disagree 1	2	3	Neutral 4	5	6	Agree 7

	Nurse		Physician		Pharmacist				Covariates[1]	
	Mean	SD	Mean	SD	Mean	SD	F	SIG	F	SIG
Pharmacist should practice in patient care areas	4.97	1.66	4.54	1.64	5.98	1.24	40.34	.001*	1.08	ns
Pharmacist should monitor each patient drug therapy regimen by maintaining a patient medication profile	5.84	1.31	4.83	1.65	6.23	1.13	70.69	.001*	2.07	ns
Pharmacist should attend and participate in patient care rounds	4.97	1.68	3.99	1.77	5.81	1.40	64.64	.001*	0.31	ns
Pharmacist should serve on the hospital's emergency team	5.38	1.63	4.30	1.79	5.52	1.56	43.38	.001**	6.78	.001
Pharmacist should perform patient interviews on selected patients	5.43	1.50	4.36	1.72	5.96	1.16	73.90	.001*	0.84	ns
Pharmacist should provide drug therapy conferences for the medical and nursing staffs	6.48	0.79	5.58	1.34	5.92	1.16	81.65	.001*	3.05	.048
Pharmacist should serve the drug information needs of the medical and nursing staffs	6.58	0.73	6.32	0.90	6.55	0.72	11.12	.001**	[illegible]	ns

Table VI (continued)

	Nurse		Physician		Pharmacist				Covariates[1]	
	Mean	SD	Mean	SD	Mean	SD	F	SIG	F	SIG
Pharmacist should check the physician's drug order prior to administration of drug to patient	5.71	1.63	5.72	1.52	6.40	1.01	12.15	.001***	2.18	ns
The Army should institute decentralized or satellite pharmacy service in its hospitals	5.11	1.63	4.44	1.59	5.53	1.54	26.74	.001*	0.45	ns
The Army should implement or expand clinical pharmacy practice in its hospitals	5.66	1.34	5.02	1.45	6.16	1.15	37.36	.001*	0.33	ns

[1]Covariates were years of military service and length of time assigned to MTF.

*Scheffe procedure indicates all possible pairs of group means differ significantly, $p < .05$.

**Scheffe procedure indicates physicians differ significantly from other groups, $p < .05$.

***Scheffe procedure indicates pharmacists differ significantly from other groups, $p < .05$.

****Scheffe procedure indicates nurses differ significantly from other groups, $p < .05$.

Table VII

Analysis of Covariance*: The Effect of Professional Group and Unit Dose Support on the Perceptions of Task Characteristics of Clinical Pharmacy Services

Score =	Disagree 1	2	3	Neutral 4	5	6	Agree 7

Task Characteristics:	(A)		(B) Unit Dose Support		Professional Group (A)		Unit Dose Support (B)		Interaction (AxB)		Covariates*	
			Yes Mean	No Mean	F	SIG	F	SIG	F	SIG	F	SIG
Pharmacist should practice in patient care areas	1	Nurse	4.93	4.94	39.81	.001	0.43	ns	1.81	ns	1.53	ns
	2	Physician	4.67	4.32								
	3	Pharmacist	5.93	6.11								
Pharmacist should monitor each patient drug therapy regimen by maintaining a patient medication profile	1	Nurse	6.03	5.53	70.18	.001	28.35	.001	0.63	ns	2.57	ns
	2	Physician	5.01	4.56								
	3	Pharmacist	6.29	6.11								
Pharmacist should attend and participate in patient care rounds	1	Nurse	5.00	4.88	55.34	.001	0.76	ns	0.13	ns	0.16	ns
	2	Physician	4.08	4.09								
	3	Pharmacist	5.82	5.68								
Pharmacist should serve on the hospital's emergency team	1	Nurse	5.46	5.30	41.66	.001	0.56	ns	2.50	ns	6.12	.002
	2	Physician	4.25	4.55								
	3	Pharmacist	5.59	5.19								
Pharmacist should perform patient interviews on selected patients	1	Nurse	5.48	5.32	65.98	.001	1.45	ns	0.67	ns	0.39	ns
	2	Physician	4.43	4.33								
	3	Pharmacist	5.91	6.08								
Pharmacist should provide drug therapy conferences for the medical and nursing staffs	1	Nurse	6.49	6.48	73.85	.001	0.63	ns	0.39	ns	2.63	ns
	2	Physician	5.67	5.52								
	3	Pharmacist	5.96	5.92								

Table VII (continued)

Task Characteristics:	(A)		(B) Unit Dose Support Yes Mean	(B) Unit Dose Support No Mean	Professional Group (A) F	Professional Group (A) SIG	Unit Dose Support (B) F	Unit Dose Support (B) SIG	Interaction (AxB) F	Interaction (AxB) SIG	Covariates* F	Covariates* SIG
Pharmacist should serve the drug information needs of the medical and nursing staffs	1	Nurse	6.58	6.59	11.85	.001	2.01	ns	3.74	.024	1.56	ns
	2	Physician	6.42	6.13								
	3	Pharmacist	6.55	6.57								
Pharmacist should check the physician's drug order prior to administration of drug to patient	1	Nurse	5.97	5.44	8.95	.001	14.76	.001	2.62	ns	2.76	ns
	2	Physician	5.75	5.72								
	3	Pharmacist	6.46	6.22								
The Army should institute decentralized or satellite pharmacy service in its hospitals	1	Nurse	5.15	5.11	27.88	.001	0.25	ns	1.36	ns	0.40	ns
	2	Physician	4.29	4.63								
	3	Pharmacist	5.57	5.46								
The Army should implement or expand clinical pharmacy practice in its hospitals	1	Nurse	5.68	5.56	40.19	.001	2.21	ns	0.11	ns	0.09	ns
	2	Physician	5.04	4.96								
	3	Pharmacist	6.27	6.03								

*Covariates were years of military service and length of time assigned to MTF.

Table VIII

Analysis of Covariance: The Effect of Professional Group and Decentralized Pharmacy Support on the Perceptions of Clinical Pharmacy Services

Score =	Disagree 1	2	3	Neutral 4	5	6	Agree 7

Task Characteristics:	(A)		(B) Type of Pharmacy Support decentral. Mean	central. Mean	Professional Group (A) F	SIG	Type of Pharmacy Support (B) F	SIG	Interaction (AxB) F	SIG	Covariates* F	SIG
Pharmacist should practice in patient care areas	1	Nurse	4.97	4.94								
	2	Physician	4.82	4.48	38.35	.001	2.22	ns	0.93	ns	1.83	ns
	3	Pharmacist	6.24	5.82								
Pharmacist should monitor each drug therapy regimen by maintaining a patient medication profile	1	Nurse	5.87	5.79								
	2	Physician	5.05	4.77	67.65	.001	2.42	ns	0.36	ns	2.65	ns
	3	Pharmacist	6.39	6.14								
Pharmacist should attend and participate in patient care rounds	1	Nurse	4.96	4.94								
	2	Physician	4.31	4.02	54.24	.001	0.70	ns	0.45	ns	0.16	ns
	3	Pharmacist	5.86	5.74								
Pharmacist should serve on the hospital's emergency team	1	Nurse	5.20	5.44								
	2	Physician	4.25	4.40	40.28	.001	1.12	ns	1.22	ns	5.86	.003
	3	Pharmacist	5.67	5.37								
Pharmacist should perform patient interviews on selected patients	1	Nurse	5.28	5.45								
	2	Physician	4.43	4.36	67.76	.001	0.07	ns	1.59	ns	0.34	ns
	3	Pharmacist	6.20	5.83								
Pharmacist should provide drug therapy conferences for the medical and nursing staffs	1	Nurse	6.47	6.48								
	2	Physician	5.60	5.60	72.68	.001	0.16	ns	0.56	ns	3.13	.044
	3	Pharmacist	6.06	5.86								

Table VIII (continued)

Task Characteristics:	(A)		(B) Type of Pharmacy Support decentral. Mean	central. Mean	Professional Group (A) F	SIG	Type of Pharmacy Support (B) F	SIG	Interaction (AxB) F	SIG	Covariates* F	SIG
Pharmacist should serve the drug information needs of the medical and nursing staffs	1	Nurse	6.62	6.59								
	2	Physician	6.43	6.31	10.29	.001	3.31	ns	1.40	ns	1.51	ns
	3	Pharmacist	6.74	6.44								
Pharmacist should check the physician's drug order prior to administration of drug to patient	1	Nurse	5.85	5.71								
	2	Physician	5.92	5.68	9.78	.001	3.69	ns	0.52	ns	2.48	ns
	3	Pharmacist	6.66	6.25								
The Army should institute decentralized or satellite pharmacy service in its hospitals	1	Nurse	5.67	4.96								
	2	Physician	5.05	4.28	23.72	.001	44.17	.001	0.12	ns	0.59	ns
	3	Pharmacist	6.08	5.56								
The Army should implement or expand clinical pharmacy practice in its hospitals	1	Nurse	5.85	5.56								
	2	Physician	5.18	4.99	36.77	.001	8.99	.003	0.17	ns	0.07	ns
	3	Pharmacist	6.44	6.07								

*Covariates were years of military service and length of time assigned to MTF.

Table IX

Clinical Areas with the Greatest Demand for Decentralized/Clinical Pharmacy Service as Perceived by Professional Groups: Nurses, Physicians and Pharmacists

Score =	Disagree 1	2	3	Neutral 4	5	6	Agree 7

	Nurse (n = 609)			Physician (n = 262)			Pharmacist (n = 140)			Overall				Covariates*	
Clinical Area:	Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Additive Rank Value	SIG	F	SIG
Medical	5.20		6	4.34	1.78	6	5.72	1.42	4	5.08	1.77	16	.001	2.54	ns
Medical ICU	5.82		1	5.21	1.94	1	5.82	1.51	2	5.68	1.68	4	.001	1.50	ns
Cardiology	5.64		3	4.56	1.94	5	5.60	1.64	5	5.38	1.80	13	.001	2.74	ns
Neurology	5.04		9	3.77	1.63	12	4.83	1.63	10	4.69	1.76	31	.001	2.56	ns
Oncology	5.50		5	5.02	1.85	3	6.05	1.54	1	5.46	1.73	9	.001	0.29	ns
Pulmonary Disease	5.12		7	4.10	1.72	8	5.25	1.62	8	4.90	1.75	23	.001	3.38	.034
Obstetrics	4.91		10	4.19	1.80	7	4.53	1.69	14	4.70	1.77	31	.001	3.22	.040
Gynecology	4.74		12	3.94	1.67	10	4.63	1.78	12	4.54	1.74	34	.001	3.48	.031
Pediatrics	5.56		4	4.57	1.83	4	5.76	1.54	3	5.37	1.76	11	.001	0.67	ns
Psychiatry	4.70		13	3.97	1.72	9	4.49	1.77	15	4.48	1.80	37	.001	3.14	.044
Nuclear Medicine	4.74		12	3.94	1.86	10	5.52	1.76	6	4.64	1.85	28	.001	2.48	ns
Surgery	5.11		8	3.97	1.69	9	5.03	1.71	9	4.80	1.81	26	.001	4.65	.010
Surgical ICU	5.72		2	5.06	1.96	2	5.47	1.61	7	5.51	1.73	11	.001	1.24	ns
Urology	4.76		11	3.73	1.58	13	4.65	1.73	11	4.48	1.75	35	.001	3.38	.034
Neurosurgery	5.14		7	3.82	1.70	11	4.58	1.81	13	4.73	1.83	31	.001	3.20	.041
Orthopedics	4.74		12	3.71	1.60	14	4.58	1.77	13	4.48	1.77	39	.001	4.03	.018

*Covariates were years of military service and length of time assigned to MTF.

Table X

Clinical Areas with the Greatest Demand for Decentralized/Clinical Pharmacy Service as Perceived by Respondents Having Previous Exposure to Decentralized/Clinical Service Versus Respondents Not Having Exposure to Decentralized/Clinical Service

Score =	Disagree 1	2	3	Neutral 4	5	6	Agree 7

	Previous Exposure		No Previous Exposure					
Clinical Area:	Mean	SD	Mean	SD	Overall Mean	df	F	SIG
Medical	5.24	1.81	5.02	1.75	5.09	1, 1024	3.55	ns
Medical ICU	5.87	1.62	5.61	1.70	5.69	1, 1036	5.51	.019
Cardiology	5.59	1.75	5.30	1.81	5.39	1, 1018	5.72	.017
Neurology	4.91	1.81	4.60	1.74	4.69	1, 998	6.85	.009
Oncology	5.56	1.72	5.42	1.73	5.46	1, 1013	1.35	ns
Pulmonary Disease	5.11	1.71	4.81	1.76	4.90	1, 1002	6.38	.011
Obstetrics	4.91	1.77	4.61	1.76	4.70	1, 1011	6.14	.013
Gynecology	4.72	1.76	4.45	1.74	4.54	1, 1007	5.15	.023
Pediatrics	5.56	1.72	5.29	1.78	5.38	1, 1025	5.33	.021
Psychiatry	4.67	1.82	4.46	1.80	4.52	1, 1012	2.93	ns
Nuclear Medicine	4.76	1.85	4.63	1.85	4.67	1, 990	0.95	ns
Surgery	4.90	1.87	4.80	1.80	4.83	1, 1017	0.59	ns
Surgical ICU	5.68	1.72	5.49	1.73	5.55	1, 1022	2.68	ns
Urology	4.62	1.81	4.47	1.73	4.52	1, 1002	1.63	ns
Neurosurgery	4.88	1.85	4.66	1.82	4.72	1, 997	3.06	ns
Orthopedics	4.62	1.80	4.42	1.76	4.48	1, 1008	2.65	ns

Table XI

Clinical Areas with the Greatest Demand for Decentralized/Clinical Pharmacy Service as Perceived by MEDCEN and MEDDAC Respondents

Score =	Disagree 1	2	3	Neutral 4	5	6	Agree 7

	MEDCEN (n = 447)			MEDDAC (n = 613)			Overall (n = 1060)				
Clinical Area:	Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Additive Rank Value	F	SIG
Medical	4.92	1.69	6	5.21	1.81	6	5.09	1.76	12	7.28	.007
Medical ICU	5.69	1.61	1	5.69	1.74	1	5.69	1.69	2		ns
Cardiology	5.25	1.72	5	5.48	1.85	3	5.38	1.80	8	4.36	.037
Neurology	4.49	1.65	11	4.85	1.83	10	4.70	1.76	21	10.65	.001
Oncology	5.48	1.63	3	5.47	1.79	4	5.47	1.72	7		ns
Pulmonary Disease	4.74	1.67	7	5.03	1.81	7	4.91	1.75	14	6.92	.008
Obstetrics	4.59	1.64	9	4.79	1.85	11	4.71	1.77	20		ns
Gynecology	4.44	1.62	13	4.62	1.83	15	4.54	1.74	28		ns
Pediatrics	5.34	1.67	4	5.41	1.82	5	5.38	1.76	9		ns
Psychiatry	4.48	1.68	12	4.58	1.88	16	4.54	1.80	28		ns
Nuclear Medicine	4.59	1.82	9	4.72	1.87	12	4.66	1.85	21		ns
Surgery	4.69	1.68	8	4.97	1.90	8	4.85	1.82	16	6.51	.010
Surgical ICU	5.55	1.65	2	5.56	1.80	2	5.56	1.74	4		ns
Urology	4.34	1.60	14	4.66	1.84	13	4.52	1.75	27	8.73	.003
Neurosurgery	4.54	1.72	10	4.88	1.91	9	4.73	1.84	19	8.67	.003
Orthopedics	4.30	1.65	15	4.63	1.85	14	4.49	1.78	29	8.50	.003

APPENDIX A

DEPARTMENT OF THE ARMY
ACADEMY OF HEALTH SCIENCES, UNITED STATES ARMY
FORT SAM HOUSTON, TEXAS 78234

S: 16 July 1979

HSPA-C 25 June 1979

SUBJECT: Decentralized Inpatient Pharmacy Service Study

1. In response to a request from the Commander, Health Services Command, the Health Care Studies Division is undertaking a study of the feasibility and potential utility of a decentralized inpatient pharmacy service.

2. Survey instruments have been developed to obtain data for analysis. Separate questionnaires have been designed for physicians, pharmacists and nurses. Your name has been randomly selected to constitute the test population. Therefore, your cooperation and assistance is solicited.

3. In support of this pilot study, you are requested to complete the attached questionnaire. When you have completed the questionnaire, fold and staple in accordance with the instructions provided on the last page and place it in the mail. It is requested that you mail your questionnaire not later than 16 July 1979. You may be assured that your responses and comments shall remain anonymous.

1 Incl
as

JAMES E. HERTZOG, M.D.
COL, MC
Deputy Chief of Staff
Professional Activities

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

AHS Form 355-2 (OT)
1 July 1979

PHARMACY SERVICE SATISFACTION QUESTIONNAIRE FOR NURSES

In an effort to provide the best health care possible we are asking you to take a few minutes to respond to the following questions and items. The questionnaire is anonymous; you are not to identify yourself. In this respect, we ask that you state your honest opinion on all questions and items. The information provided will be held in the strictest confidence.

PART I

1. Age: _____ 2. Sex: Male _____ Female _____

3. Military _____ Civilian _____

4. Rank/Grade _____

5. Duty title _____ MOS _____

6. Specialty _____

7. In what year did you pass your boards_____

8. Years military/government service_____

9. Years civilian hospital experience _____

10. Are you assigned/employed at a MEDCEN _____ MEDDAC _____

11. On what clinic, ward or service do you spend the majority of your time delivering health care _____

12. How long have you been assigned/employed with your present MEDCEN/MEDDAC_____

13. How long have you been assigned/employed with your present clinic/ward/service _____

14. Is your ward/service supported by a unit dose distribution system

yes no

15. Is your ward/service supported by a decentralized or satellite pharmacy?

yes no

15.1 If yes, are other wards or services supported by the same decentralized or satellite pharmacy?

yes no

5.2 If yes, please list the other wards/services?

_____

_____

_____

16. Have you been assigned/employed at other hospitals which provide decentralized or satellite pharmacy services

yes no

17. Please indicate the average amount of time that you spend in the performance of the following tasks per day (give your best estimate in minutes).

Task	Time
Prepare doses for administration	_____
Administer PRN dosage (include travel time)	_____
Requisition drugs to patient floor; refills	_____
Credit or disposition unused medications	_____
Requisition drugs to patient floor; new orders	_____
Prepare medication cards	_____
Prepare I.V. admixtures	_____
Dispose of syringes	_____

PART II To the best of your knowledge, do the pharmacists provide the support indicated below to your ward/service, and how important is that function to you? (Check yes, if service is provided and no if the service is not provided.) Circle one number on each line, even if the service is not provided.

		YES/NO	VERY UNIMPORTANT			NEUTRAL			VERY IMPORTANT
1.	Conduct follow-up observation of patients to determine efficacy of drug therapy		1	2	3	4	5	6	7
2.	Conduct follow-up observation to determine possible adverse reactions to drug therapy		1	2	3	4	5	6	7
3.	Providing information on drug dosage		1	2	3	4	5	6	7
4.	Participation on emergency team		1	2	3	4	5	6	7
5.	Participation in the establishment of a drug Formulary for your hospital		1	2	3	4	5	6	7
6.	Providing information about a drug that is new or unfamiliar		1	2	3	4	5	6	7
7.	Compounding I.V. additives		1	2	3	4	5	6	7
8.	Answering questions asked by nurse		1	2	3	4	5	6	7
9.	Maintaining drug therapy information on patients		1	2	3	4	5	6	7
10.	Participation in introduction of RN's to pharmacy services at your hospital		1	2	3	4	5	6	7

PART III **Please read each item below, then using the 7-point scale provided, indicate your SATISFACTION/DISSATISFACTION.**

How satisfied or dissatisfied are you with...
(Circle one number on each line)

	Extremely Dissatisfied			Neutral			Extremely Satisfied
1. The pharmacy service as a whole?	1	2	3	4	5	6	7
2. The drug information provided by the pharmacy service in response to your request?	1	2	3	4	5	6	7
3. The information that is placed on inpatient medication labels?	1	2	3	4	5	6	7
4. The availability of the pharmacist?	1	2	3	4	5	6	7
5. The hours of operation of the pharmacy service?	1	2	3	4	5	6	7
6. The accessibility of the pharmacy service (i.e., is the location of the pharmacy convenient to you)?	1	2	3	4	5	6	7
7. The transportation of medication to the floor?	1	2	3	4	5	6	7
8. The availability of emergency drugs?	1	2	3	4	5	6	7
9. The contents of emergency medication carts and kits?	1	2	3	4	5	6	7
10. The unit dose drug distribution system?	1	2	3	4	5	6	7
11. The way the pharmacy receives medication orders (i.e., the way the physicians' orders are forwarded to the pharmacy)?	1	2	3	4	5	6	7
12. The pharmacist's monitoring of each patient's drug orders and alerting you to potential allergies, interactions, overdoses, etc.?	1	2	3	4	5	6	7

		Extremely Dissatisfied			Neutral			Extremely Satisfied
13.	The way in which an order is filled, (i.e., failure to fill an order or to fill an order improperly)?	1	2	3	4	5	6	7
14.	The staffing of the pharmacy department?	1	2	3	4	5	6	7
15.	The supply and resupply of the medication cart (unit dose cart)?	1	2	3	4	5	6	7
16.	The number of missing doses?	1	2	3	4	5	6	7
17.	Drug discharge consultation by the pharmacist to orient the patient to proper methods and effects of taking their medication after discharge?	1	2	3	4	5	6	7
18.	The education of patients and families in medication compliance?	1	2	3	4	5	6	7
19.	Drug therapy monitoring of selected patients (i.e., regular drug profile review, regular chart review, patient contact, etc.) by the pharmacist?	1	2	3	4	5	6	7
20.	Effective communication among nurses, pharmacists, and physicians?	1	2	3	4	5	6	7
21.	The amount of medication waste?	1	2	3	4	5	6	7
22.	The amount of time it takes an order to arrive at the pharmacy?	1	2	3	4	5	6	7
23.	The amount of time it takes to process an order (i.e., fill a prescription) within the pharmacy?	1	2	3	4	5	6	7

	Extremely Dissatisfied			Neutral			Extremely Satisfied
24. The amount of time it takes to administer a drug order to the patient after being processed (i.e., filled) by the pharmacy?	1	2	3	4	5	6	7
25. The accuracy of the patient medication profiles?	1	2	3	4	5	6	7
26. Information on the pharmacy patient profile?	1	2	3	4	5	6	7

PART IV Please read each item below, then using the 7-point scale provided indicate how much you AGREE or DISAGREE with the statement. (Circle one number on each line)

	Disagree			Neutral			Agree
1. Pharmacist should practice in patient care areas	1	2	3	4	5	6	7
2. Pharmacist should monitor each patient drug therapy regimen by maintaining a patient medication profile	1	2	3	4	5	6	7
3. Pharmacist should attend and participate in patient care rounds	1	2	3	4	5	6	7
4. Pharmacist should serve on the hospitals emergency team	1	2	3	4	5	6	7
5. Pharmacist should perform patient interviews on selected patients	1	2	3	4	5	6	7
6. Pharmacist should provide drug therapy conferences for the medical and nursing staff	1	2	3	4	5	6	7
7. Pharmacist should serve the drug information needs of the medical and nursing staffs	1	2	3	4	5	6	7

	Disagree			Neutral			Agree
8. Pharmacist should check the physicians drug order prior to administration of drug to patient	1	2	3	4	5	6	7
9. The Army should institute decentralized or satellite pharmacy service in its hospitals	1	2	3	4	5	6	7
10. The Army should implement or expand clinical pharmacy practice in its hospitals	1	2	3	4	5	6	7
11. The following wards/services should be supported by decentralized/clinical pharmacy service							
11.1 Medical	1	2	3	4	5	6	7
11.2 Medical ICU	1	2	3	4	5	6	7
11.3 Cardiology	1	2	3	4	5	6	7
11.4 Neurology	1	2	3	4	5	6	7
11.5 Oncology	1	2	3	4	5	6	7
11.6 Pulmonary Disease	1	2	3	4	5	6	7
11.7 Obstetrics	1	2	3	4	5	6	7
11.8 Gynecology	1	2	3	4	5	6	7
11.9 Pedictrics	1	2	3	4	5	6	7
11.10 Psychiatry	1	2	3	4	5	6	7
11.11 Nuclear Medicine	1	2	3	4	5	6	7
11.12 Surgery	1	2	3	4	5	6	7
11.13 Surgical ICU	1	2	3	4	5	6	7
11.14 Urology	1	2	3	4	5	6	7
11.15 Neurosurgery	1	2	3	4	5	6	7
11.16 Orthopedics	1	2	3	4	5	6	7
11.17 Other (Specify) _____	1	2	3	4	5	6	7

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(FOLD ON THIS LINE SECOND)

DEPARTMENT OF THE ARMY

HEALTH CARE STUDIES DIVISION
ACADEMY OF HEALTH SCIENCES, US ARMY
FORT SAM HOUSTON, TEXAS 78234
HSA-CHC

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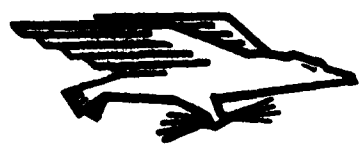

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HEALTH CARE STUDIES DIVISION
ACADEMY OF HEALTH SCIENCES, US ARMY
FORT SAM HOUSTON, TEXAS 78234

ATTN: CPT Rauch

(FOLD ON THIS LINE FIRST)

DEPARTMENT OF THE ARMY
ACADEMY OF HEALTH SCIENCES, UNITED STATES ARMY
FORT SAM HOUSTON, TEXAS 78234

S: 16 July 1979

HSPA-C

25 June 1979

SUBJECT: Decentralized Inpatient Pharmacy Service Study

1. In response to a request from the Commander, Health Services Command, the Health Care Studies Division is undertaking a study of the feasibility and potential utility of a decentralized inpatient pharmacy service.

2. Survey instruments have been developed to obtain data for analysis. Separate questionnaires have been designed for physicians, pharmacists and nurses. Your name has been randomly selected to constitute the test population. Therefore, your cooperation and assistance is solicited.

3. In support of this pilot study, you are requested to complete the attached questionnaire. When you have completed the questionnaire, fold and staple in accordance with the instructions provided on the last page and place it in the mail. It is requested that you mail your questionnaire not later than 16 July 1979. You may be assured that your responses and comments shall remain anonymous.

1 Incl
as

for JAMES E. HERTZOG, M.D.
COL, MC
Deputy Chief of Staff
Professional Activities

AHS Form 355-2 (OT)
1 July 1979

PHARMACY SERVICE SATISFACTION QUESTIONNAIRE FOR PHYSICIANS

In an effort to provide the best health care possible we are asking you to take a few minutes to respond to the following questions and items. The questionnaire is anonymous; you are not to identify yourself. In this respect, we ask that you state your honest opinion on all questions and items. The information provided will be held in the strictest confidence.

PART I

1. Age:_____ 2. Sex: Male_____ Female _____

3. Military _____ Civilian _____

4. Rank/Grade _____

5. Duty title _____ MOS_____

6. Specialty _____

7. In what year did you pass your boards _____

8. Years military/government service _____

9. Years civilian hospital experience _____

10. Are you assigned/employed at a MEDCEN_____ MEDDAC_____

11. On what clinic, ward or service do you spend the majority of your time delivering health care _____

12. How long have you been assigned/employed with your present MEDCEN/MEDDAC _____

13. How long have you been assigned/employed with your present clinic/ward/service _____

14. Is your ward/service supported by a unit dose distribution system?

Yes No

15. Is your ward/service supported by a decentralized or satellite pharmacy?

Yes No

15.1 If yes, are other wards or services supported by the same decentralized or satellite pharmacy?

Yes No

15.2 If yes, please list the other wards/services?

_____

_____

_____

16. Have you been assigned/employed at other hospitals which provide decentralized or satellite pharmacy services

Yes No

17. On the average, what percent of your working time is spent:

(a) Providing medical care and/or diagnostic services? _____

(b) Performing essentially administrative tasks? _____

(c) Providing professional supervision to other health care personnel or performing teaching functions? _____

PART II To the best of your knowledge, do the pharmacists provide the support indicated below to your ward/service, and how important is that function to you? Check yes, if service is provided and no if it is not provided. Circle one number on each line even if the service is not provided.

		YES/NO	VERY UNIMPORTANT			NEUTRAL			VERY IMPORTANT
1.	Conduct follow-up observation of patients to determine efficacy of drug therapy		1	2	3	4	5	6	7
2.	Conduct follow-up observation to determine possible adverse reactions to drug therapy		1	2	3	4	5	6	7
3.	Providing information on drug dosage		1	2	3	4	5	6	7
4.	Participation on emergency team		1	2	3	4	5	6	7
5.	Participation in the establishment of a drug Formulary for your hospital		1	2	3	4	5	6	7
6.	Providing information about a drug that is new or unfamiliar		1	2	3	4	5	6	7
7.	Compounding I.V. additives		1	2	3	4	5	6	7
8.	Answering questions asked by physicians		1	2	3	4	5	6	7
9.	Maintaining drug therapy information on patients		1	2	3	4	5	6	
10.	Participation in introduction of RN's to pharmacy services at your hospital		1	2	3	4	5	6	7

PART III Please read each item below, then using the 7-point scale provided, indicate your SATISFACTION/DISSATISFACTION.

How satisfied or dissatisfied are you with...
(Circle one number on each line)

	Extremely Dissatisfied			Neutral			Extremely Satisfied
1. The pharmacy service as a whole?	1	2	3	4	5	6	7
2. The drug information provided by the pharmacy service in response to your request?	1	2	3	4	5	6	7
3. The information that is placed on inpatient medication labels?	1	2	3	4	5	6	7
4. The availability of the pharmacist?	1	2	3	4	5	6	7
5. The hours of operation of the pharmacy service?	1	2	3	4	5	6	7
6. The accessibility of the pharmacy service (i.e., is the location of the pharmacy convenient to you)?	1	2	3	4	5	6	7
7. The transportation of medications to the floor?	1	2	3	4	5	6	7
8. The availability of emergency drugs?	1	2	3	4	5	6	7
9. The contents of emergency medication carts and kits?	1	2	3	4	5	6	7
10. The unit dose drug distribution system?	1	2	3	4	5	6	7
11. The way the pharmacy receives medication orders, (i.e., the way your orders (prescriptions) are forwarded to the pharmacy)?	1	2	3	4	5	6	7

		Extremely Dissatisfied			Neutral			Extremely Satisfied
12.	The pharmacist's monitoring of each patient's drug orders and alerting you to potential allergies, interactions, overdoses, etc.?	1	2	3	4	5	6	7
13.	The way in which an order is filled (i.e., failure to fill an order or to fill an order improperly)?	1	2	3	4	5	6	7
14.	The staffing of the pharmacy department?	1	2	3	4	5	6	7
15.	Drug discharge consultations by the pharmacist to orient the patient to proper methods and effects of taking their medication after discharge?	1	2	3	4	5	6	7
16.	The education of patients and families in medication compliance?	1	2	3	4	5	6	7
17.	Drug therapy monitoring of selected patients (i.e., regular drug profile review, regular chart review, patient contact, etc.) by the pharmacist?	1	2	3	4	5	6	7
18.	Effective communication among nurses, pharmacists and physicians?	1	2	3	4	5	6	7
19.	The amount of medication waste?	1	2	3	4	5	6	7
20.	The amount of time it takes for an order to arrive at the pharmacy?	1	2	3	4	5	6	7
21.	The amount of time it takes to process an order (i.e., fill a prescription) within the pharmacy?	1	2	3	4	5	6	7

	Extremely Dissatisfied			Neutral			Extremely Satisfied
22. The amount of time it takes to administer a drug order to the patient after being processed (i.e., filled) by the pharmacy?	1	2	3	4	5	6	7
23. The accuracy of patient medication profiles?	1	2	3	4	5	6	7
24. Information on the pharmacy patient profile.	1	2	3	4	5	6	7

PART IV Please read each item below, then using the 7-point scale provided, indicate how much you AGREE or DISAGREE with the statement. (Circle one number on each line)

	Disagree			Neutral			Agree
1. Pharmacist should practice in patient care areas	1	2	3	4	5	6	7
2. Pharmacist should monitor each patients drug therapy regimen by maintaining a patient medication profile	1	2	3	4	5	6	7
3. Pharmacist should attend and participate in patient care rounds	1	2	3	4	5	6	7
4. Pharmacist should serve on the hospital emergency team	1	2	3	4	5	6	7
5. Pharmacist should perform patient interviews on selected patients	1	2	3	4	5	6	7
6. Pharmacist should provide drug therapy conferences for the medical and nursing staff	1	2	3	4	5	6	7
7. Pharmacist should serve the drug information needs of the medical and nursing staff	1	2	3	4	5	6	7

		Disagree			Neutral		Agree	
8.	Pharmacist should check the physicians drug order prior to administration of drug to patient	1	2	3	4	5	6	7
9.	The Army should institute decentralized or satellite pharmacy service in its hospitals	1	2	3	4	5	6	7
10.	The Army should implement or expand clinical pharmacy practice in its hospitals	1	2	3	4	5	6	7
11.	The following wards/services should be supported by decentralized/ clinical pharmacy service							
	11.1 Medical	1	2	3	4	5	6	7
	11.2 Medical ICU	1	2	3	4	5	6	7
	11.3 Cardiology	1	2	3	4	5	6	7
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	11.5 Oncology	1	2	3	4	5	6	7
	11.6 Pulmonary Disease	1	2	3	4	5	6	7
	11.7 Obstetrics	1	2	3	4	5	6	7
	11.8 Gynecology	1	2	3	4	5	6	7
	11.9 Pediatrics	1	2	3	4	5	6	7
	11.10 Psychiatry	1	2	3	4	5	6	7
	11.11 Nuclear Medicine	1	2	3	4	5	6	7
	11.12 Surgery	1	2	3	4	5	6	7
	11.13 Surgical ICU	1	2	3	4	5	6	7
	11.14 Urology	1	2	3	4	5	6	7
	11.15 Neurosurgery	1	2	3	4	5	6	7
	11.16 Oethopedics	1	2	3	4	5	6	7
	11.17 Other (Specify) _____	1	2	3	4	5	6	7

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(FOLD ON THIS LINE SECOND)

DEPARTMENT OF THE ARMY

HEALTH CARE STUDIES DIVISION
ACADEMY OF HEALTH SCIENCES, US ARMY
FORT SAM HOUSTON, TEXAS 78234
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HEALTH CARE STUDIES DIVISION
ACADEMY OF HEALTH SCIENCES, US ARMY
FORT SAM HOUSTON, TEXAS 78234

ATTN: CPT Rauch

(FOLD ON THIS LINE FIRST)

DEPARTMENT OF THE ARMY
ACADEMY OF HEALTH SCIENCES, UNITED STATES ARMY
FORT SAM HOUSTON, TEXAS 78234

S: 16 July 1979

HSPA-C

25 June 1979

SUBJECT: Decentralized Inpatient Pharmacy Service Study

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1 Incl
as

for JAMES E. HERTZOG, M.D.
COL, MC
Deputy Chief of Staff
Professional Activities

AMERICAN REVOLUTION BICENTENNIAL 1776-1976

AHS Form 355-2 (OT)
1 July 1979

PHARMACY SERVICE SATISFACTION QUESTIONNAIRE FOR PHARMACISTS

In an effort to provide the best health care possible we are asking you to take a few minutes to respond to the following questions and items. The questionnaire is anonymous; you are not to identify yourself. In this respect, we ask that you state your honest opinion on all questions and items. The information will be held in the strictest confidence.

PART I

1. Age:_____ 2. Sex: Male_____ Female_____

3. Military_____ Civilian_____

4. Duty title_____

5. Licenses, certificates, or registration you hold (specify)

_____

_____

6. Indicate below the degree or degrees you received and the year you received it (them)

	Check as many as apply	Year
Ph.G or Ph.C		____
Bachelor of Arts		____
Bachelor of Science		____
Master of Science		____
Ph.D or D. Sc.		____
Other (specify)		____

_____

7. In what year did you pass your boards? _____

8. Years military/government service _____

9. Years civilian hospital experience _____

10. Are you assigned/employed at a MEDCEN_____ MEDDAC_____

11. How long have you been assigned/employed with your present MEDCEN/MEDDAC _____

12. How long have you been practicing hospital pharmacy? _____

13. What are your professional affiliations?

_____

_____

_____

14. Do you practice in a unit dose distribution system?

Yes No (Circle your answer)

15. Do you provide inpatient support from a decentralized or satellite pharmacy?

Yes No (Circle your answer)

15.1 If yes, please indicate the services supported by your decentralized or satellite pharmacy.

_____

_____

_____

16. Have you been assigned/employed at other hospitals which provided decentralized or satellite pharmacy service?

Yes No (Circle your answer)

17. What percentage of your duty time is spent in support of:

Inpatients _____% Outpatients _____% Other _____%

18. Please indicate your clinical pharmacy experience:

			Length of time
(a)	Academic:	Yes No	_____
(b)	OJT:	Yes No	_____
(c)	Clinical Practice:	Yes No	_____

PART II **Please indicate if you, as a pharmacist, perform the following types of support and how important you feel that support is to the overall mission in health care. (Check yes, if service is provided and no if the service is not provided.)**

		YES/NO	VERY UNIMPORTANT		NEUTRAL			VERY IMPORTANT	
1.	Conduct follow-up observation of patients to determine efficacy of drug therapy		1	2	3	4	5	6	7
2.	Conduct follow-up observation to determine possible adverse reactions to drug therapy		1	2	3	4	5	6	7
3.	Providing information on drug dosage		1	2	3	4	5	6	7
4.	Participation on drug team		1	2	3	4	5	6	7
5.	Participation in the establishment of a drug Formulary for your hospital		1	2	3	4	5	6	7
6.	Providing information about a drug that is new or unfamiliar		1	2	3	4	5	6	7
7.	Compounding I.V. additives		1	2	3	4	5	6	7
8.	Answering questions asked by nurses		1	2	3	4	5	6	7
9.	Answering questions asked by physicians		1	2	3	4	5	6	7
10.	Maintaining drug therapy information on patients		1	2	3	4	5	6	7
11.	Participation in introduction of RN's to pharmacy services at your hospital		1	2	3	4	5	6	7

PART III **Please read each item below, then using the 7-point scale provided, indicate your SATISFACTION/DISSATISFACTION.**

How satisfied or dissatisfied are you with...
(Circle one number on each line)

	Extremely Dissatisfied			Neutral			Extremely Satisfied
1. The role provided by the pharmacy service in your MEDCEN/MEDDAC toward patient care?	1	2	3	4	5	6	7
2. The amount of drug information that you are currently providing in response to physician and nurse needs?	1	2	3	4	5	6	7
3. Your availability to provide professional services to other members of the health care team?	1	2	3	4	5	6	7
4. The hours of operation of the pharmacy?	1	2	3	4	5	6	7
5. The accessibility of the pharmacy service (i.e., do you feel the location of the pharmacy is convenient for other members of the health care team)?	1	2	3	4	5	6	7
6. The transportation of medication to the floor?	1	2	3	4	5	6	7
7. The availability of emergency drugs for use by the health care team?	1	2	3	4	5	6	7
8. The contents of emergency medication carts and kits?	1	2	3	4	5	6	7
9. The unit dose drug distribution system?	1	2	3	4	5	6	7
10. The way the pharmacy receives orders, (i.e., the way physicians orders are forwarded to the pharmacy)?	1	2	3	4	5	6	7

		Extremely Dissatisfied			Neutral			Extremely Satisfied
11.	The pharmacist's monitoring of each patients' drug orders and alerting other health care providers (nurses, physicians, etc.) to potential allergies, interactions, overdoses, etc.?	1	2	3	4	5	6	7
12.	The staffing of the pharmacy department (i.e., the number of pharmacists and assistants)?	1	2	3	4	5	6	7
13.	The supply and resupply of the medication cart (unit dose cart)?	1	2	3	4	5	6	7
14.	The number of missing doses?	1	2	3	4	5	6	7
15.	Drug discharge consultations by the pharmacist to orient the patient to proper methods and effects of taking their medication after discharge?	1	2	3	4	5	6	7
16.	The education of patients and families in medication compliance?	1	2	3	4	5	6	7
17.	Drug therapy monitoring of selected patients (i.e., regular drug profile review, regular chart review, patient contact, etc.) by the pharmacist?	1	2	3	4	5	6	7
18.	Effective communication among nurses, pharmacists, and physicians?	1	2	3	4	5	6	7
19.	The amount of medication waste?	1	2	3	4	5	6	7
20.	The amount of time it takes an order to arrive at the pharmacy?	1	2	3	4	5	6	7
21.	The amount of time it takes to process an order (i.e., fill a prescription) within the pharmacy?	1	2	3	4	5	6	7

		Extremely Dissatisfied			Neutral			Extremely Satisfied
22.	The amount of time it takes to administer a drug order to the patient after being processed (i.e., filled) by the pharmacy?	1	2	3	4	5	6	7
23.	Accuracy of patient medication profiles?	1	2	3	4	5	6	7
24.	Information on the pharmacy patient profile?	1	2	3	4	5	6	7
25.	Your pay?	1	2	3	4	5	7	7
26.	Your opportunity for advancement?	1	2	3	4	5	6	7
27.	Use of your education effectively?	1	2	3	4	5	6	7
28.	Working conditions?	1	2	3	4	5	6	7
29.	Challenging work?	1	2	3	4	5	6	7
30.	Forms used for doctor's orders, therapeutic plan, etc?	1	2	3	4	5	6	7

PART IV Please read each item below, then using the 7-point scale provided, indicate how much you AGREE or DISAGREE with the statement. (Circle one number on each line)

		Disagree			Neutral			Agree
1.	Pharmacist should practice in patient care areas	1	2	3	4	5	6	7
2.	Pharmacist should monitor each patients drug therapy regimen by maintaining a patient medication profile	1	2	3	4	5	6	7
3.	Pharmacist should attend and participate in patient care rounds	1	2	3	4	5	6	7
4.	Pharmacist should serve on the hospitals emergency team	1	2	3	4	5	6	7
5.	Pharmacist should perform patient interviews on selected patients	1	2	3	4	5	6	7

	Disagree			Neutral			Agree
6. Pharmacist should provide drug therapy conferences for the medical and nursing staff	1	2	3	4	5	6	7
7. Pharmacist should serve the drug information needs of the medical and nursing staff	1	2	3	4	5	6	7
8. Pharmacist should check the physicians drug orders prior to administration of drug to patient	1	2	3	4	5	6	7
9. The Army should institute decentralized or satellite pharmacy service in its hospitals	1	2	3	4	5	6	7
10. The Army should implement or expand clinical pharmacy practice in its hospitals	1	2	3	4	5	6	7
11. Routinely drugs should be administered by pharmacy personnel	1	2	3	4	5	6	7
12. Patient care will improve when decentralized/clinical pharmacy service is provided	1	2	3	4	5	6	7
13. There is a need to expand or implement decentralized/clinical pharmacy service at my facility	1	2	3	4	5	6	7
14. The following wards/services should be supported by decentralized/clinical pharmacy service							
14.1 Medical	1	2	3	4	5	6	7
14.2 Medical ICU	1	2	3	4	5	6	7
14.3 Cardiology	1	2	3	4	5	6	7
14.4 Neurology	1	2	3	4	5	6	7
14.5 Oncology	1	2	3	4	5	6	7
14.6 Pulmonary Disease	1	2	3	4	5	6	7

		Disagree			Neutral			Agree
14.7	Obstetrics	1	2	3	4	5	6	7
14.8	Gynecology	1	2	3	4	5	6	7
14.9	Pediatrics	1	2	3	4	5	6	7
14.10	Psychiatry	1	2	3	4	5	6	7
14.11	Nuclear Medicine	1	2	3	4	5	6	7
14.12	Surgery	1	2	3	4	5	6	7
14.13	Surgical ICU	1	2	3	4	5	6	7
14.14	Urology	1	2	3	4	5	6	7
14.15	Neurosurgery	1	2	3	4	5	6	7
14.16	Orthopedics	1	2	3	4	5	6	7
14.17	Other (Specify)	1	2	3	4	5	6	7

_____

PART V There are many functions which a pharmacist can perform to assist other members of the hospital's professional staff. As a pharmacist there are some which you may consider of primary importance, others which are of only secondary importance and still others which you feel are really outside the purview of your professional responsibility. Would you please circle one number after each of the following to show how you feel about the function.

	Primary Importance	Secondary Importance	Outside My Purview
Participation in obtaining drug history upon admission of a new patient	1	2	3
2. Conduct follow-up observation of patients to determine efficacy of drug therapy	1	2	3
3. Conduct follow-up observation of patient to determine possible adverse reactions to drug therapy	1	2	3
4. Bedside consultation with patients to answer questions about their drug therapy	1	2	3
5. Providing information on drug dosage	1	2	3
6. Providing information about compatability or incompatability of intended drug therapy	1	2	3
7. Researching drug therapy problems	1	2	3
8. Providing new information about drug therapy	1	2	3
9. Participation on emergency teams	1	2	3
10. Participation in introduction of interns and residents to pharmacy services at your hospital	1	2	3
11. Participation in introduction of new RN's to pharmacy at your hospital	1	2	3
12. Participation in the establishment of a drug Formulary for your hospital	1	2	3
13. Participation in professional societies	1	2	3
14. Organization of and/or participation in a plan for follow-up of effectiveness of drug therapy after patient has been discharges	1	2	3
15. Your functions in the drug distribution system	1	2	3

		Primary Importance	Secondary Importance	Outside My Purview
16.	Your role as a pharmacist in regard to activities other than those related to the drug distribution system	1	2	3
17.	Training of pharmacy assistants	1	2	3
18.	Supervision of pharmacy assistants	1	2	3
19.	Interpretation of all physician drug orders	1	2	3
20.	Compounding I.V. additives	1	2	3
21.	Suggesting drug therapy changes to physicians	1	2	3
22.	Providing information relevant to selected patients drug therapy	1	2	3
23.	Participation in patient rounds	1	2	3
24.	Presenting drug therapy conferences	1	2	3
25.	Providing special intensive drug therapy monitoring of selected patients, on request	1	2	4
26.	Answering questions asked by physicians	1	2	3
27.	Answering questions asked by nurses	1	2	3
28.	Maintaining drug therapy information on patients	1	2	3
29.	Asking questions of the drug information service (DIS) concerning selected patients drug therapy	1	2	3

PART VI Based upon the best information available to you, or your best estimate, how much time per day do you spend in each of the following activities? If none, indicate 0.

		Time in minutes
1.	Monitoring patient medical records	
2.	Participating in shift report	
3.	Answering physician questions	
4.	Reading professional literature	
5.	Attending staff meetings	
6.	Answering nurses and ward clerk questions	
7.	Participating in patient rounds	
8.	Questioning physician orders	
9.	Working on special projects	
10.	Interviewing patients	
11.	Participating on emergency team	
12.	Processing drug information service inquiries	
13.	Doing patient drug therapy research	
14.	Interpreting orders, checking transcription and dose	
15.	Performing technician duties	
16.	Checking doses in drawers	
17.	Preparing I.V. admixtures	
18.	Transcribing orders	
19.	Supervising pharmacy technician	
20.	Preparing E.P. doses	
21.	Performing other miscellaneous duties	

(STAPLE HERE AFTER FOLDING)

(FOLD ON THIS LINE SECOND)

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